



Find components first

$$+F_{Ax} = F_A \cos \theta$$

$$+F_{Ay} = F_A \sin \theta$$

Known / Find

$$a_x = \text{Find}$$

$$a_y = 0 \text{ m/s}^2$$

$$+F_{Ax} = F_A \cos \theta = 40 \text{ N} \cos 18^\circ$$

$$+F_{Ay} = F_A \sin \theta = 40 \text{ N} \sin 18^\circ$$

$$m = 20 \text{ kg}$$

Equation / solution

x-dir

$$\Sigma F = ma$$

$$\overset{\text{NFE}}{+F_{Ax}} = m a_x$$

$$F_A \cos \theta = m a_x$$

$$\frac{F_A \cos \theta}{m} = a_x$$

$$\frac{40 \text{ N} \cos 18^\circ}{20 \text{ kg}} = a_x$$

$$1.9 \frac{\text{m}}{\text{s}^2} = a_x$$

$$\frac{\text{U.A.}}{\left[\frac{\text{N}}{\text{kg}} \right]} = \left[\frac{\frac{\text{kg} \cdot \text{m}}{\text{s}^2}}{\text{kg}} \right] = \left[\frac{\text{m}}{\text{s}^2} \right] \text{ units ok} \checkmark$$

Response

$$a = 1.9 \frac{\text{m}}{\text{s}^2}$$